

**UNIVERSAL IMMUNIZATION PROGRAMME**

**CONDUCT IMMUNIZATION  
SESSION**



**Ministry of Health and Family Welfare  
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# CONDUCT IMMUNIZATION SESSION

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## CONDUCT IMMUNIZATION SESSION

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## CONDUCT IMMUNIZATION SESSIONS

### INTRODUCTION

Vaccination activity should not be an end in itself. Vaccinations should lead to immunity against the particular disease and reduction in morbidity and mortality.

Providing vaccinations does not guarantee a reduction in disease morbidity and mortality. The **FULL COURSE** of the **POTENT** vaccines must be given at the **RIGHT AGE**.

As a manager of the immunization programme it is your responsibility to schedule vaccination sessions and to ensure that they are conducted properly. You must also ensure that **ALL** the pregnant women and infants in your area are covered.

This module describes the tasks which must be performed in order to conduct a vaccination session. You may have other responsibilities in addition to the immunization programme, only those tasks which are related to conducting vaccination sessions are presented here. No programme, however, can be so limited that a child who is sick or mal-nourished is vaccinated and then sent away without receiving treatment or advice. Therefore, the tasks described here are to be coordinated with and performed in conjunction with the other tasks that your centre must perform.

There are several tasks that must be performed before vaccination sessions can be organised. Different activities are undertaken by different people. It will be your responsibility to coordinate the work so that things run smoothly. You will need to define **TASK DESCRIPTIONS** and **JOB DESCRIPTIONS** to ensure that the things are done correctly and in time.

It will not always be possible to perform vaccination tasks exactly as they are presented here. This module describes one way that immunization sessions might be conducted. Sessions may be conducted by adapting for specific needs to suit local conditions.



STATEMENT OF PURPOSE

In this module, you will practise skills that will enable you to (1) plan a immunization session schedule which is practical and effective, and (2) successfully conduct a immunization session.



## **1.0 PREPARE AN ACTION PLAN**

1.1 The success of the immunization programme depends to a large extent on the thoroughness of the plans that have preceded the field operations. The various activities must be done correctly and in time in relation to each other.

The planning of the immunization programme must take into consideration the development and strengthening of all the major tasks under the programme. These include the development of the cold chain and streamlining logistics of vaccine supplies, training of personnel, health education and other measures to enhance demand generation, arrangements for transportation and mobility, procurement of essential supplies, chalking out time schedule of activities and monitoring and evaluation.

1.2 Vaccinations should lead to reduction in morbidity and mortality of diseases. Surveillance forms an integral part of the planning procedure not only to document the impact of the services but also for concurrent monitoring to detect in time possible deficiencies in the implementation of the programme.

1.3 To effectively plan for universal immunization coverage of pregnant women and infants in your area, you must have a clear idea of the following:

- a) the total estimated number of pregnant women and infants;
- b) manpower and health facilities available;
- c) availability of other resources;
- d) geographical terrain, accessibility of areas in different seasons, and the state of roads and communication facilities; and
- e) resources and assistance that can be tapped from other sources.



1.4 You must clearly define :

A. TASK DESCRIPTIONS of all of the steps to be performed in order to carry out each major step. Task descriptions describe what must be done.

B. JOB DESCRIPTIONS which clearly describe the tasks to be performed by the staff member. Job descriptions describe who will do the work.

Each task described in the task descriptions must be included somewhere in a job description of an individual staff member. Otherwise it will not be clear who is to perform which tasks, and some steps may not always be performed, or may not even be performed at all.

1.5 The plans must be made locally at all levels at which vaccination services are undertaken. The plans must be implemented locally for these to be useful.

List of activities at PHC and district levels drawing up your action plans is given at pages 5 & 6.



LIST OF ACTIVITIES AT PHC LEVEL

1. Prepare a plan of action for the PHC. Chalk out strategies of implementation for the coverage of the eligible children and pregnant women in the area. Draw up a time schedule for outreach operations and campaigns.
2. Mobilize resources and cooperation of other Government departments, voluntary organizations, organized sector, community leaders and others.
3. Arrange a briefing session with the concerned staff to explain the objectives of the programme and the strategies of implementation. Define job responsibilities. Arrange training programme.
4. Place an indent for the required quantities of vaccines with the concerned district health officer. Check balance stocks before placing orders for fresh supplies. Keep not more than one month's requirements.
5. Check that all supplies and equipment required are available. Place an order with the district health officer or procure if funds are available.
6. Make arrangements for the availability of required quantities of ice, kerosene and other supplies as well as for the mobility of the staff.
7. Arrange for wide publicity to encourage community participation.
8. Ensure regular monitoring and supervision of work. Ensure completion of recommended immunization schedule at the right age. Send monthly feedback to the district health officer and to the subcentres.
9. Organize inter-sectoral coordination meetings periodically to enlist fuller participation and support.
10. Participate in the epidemiological evaluation of the programme and annual evaluation of vaccination coverage.



LIST OF ACTIVITIES AT DISTRICT LEVEL

1. Prepare a plan of action for the District.
2. Mobilize resources and cooperation of other Government departments, voluntary organizations, organized sector and others.
3. Arrange a briefing session with the concerned officers of the PHCs, medical colleges, sentinel centres, other government agencies and voluntary organizations.
4. Define task and job descriptions and coordinate the work of the various agencies. Plan training activities.
5. Chalk out strategies of implementation of different areas. Draw up a time schedule for outreach operations and campaigns in consultation with the MOs of the PHCs.
6. Place an indent with the State UIP Officer for the required quantities of vaccines indicating periodicity of supply.
7. Arrange for the collection of vaccines from the state stores/nearest airport. Keep not more than 3 months' requirements at the district stores if electricity supply is reliable. Distribute not more than one month's requirements to the PHCs after checking the previous balance stock. Maintain records of vaccines received, distributed and in stock.
8. Draw up an inventory of the cold storage facilities and indicate further requirements to the state EPI officer.



9. Check that all supplies and equipment required are available. Place an indent with the state ~~U/P~~ officer or arrange for procurement if funds are available.
10. Make arrangements for the availability of required quantities of ice, kerosene and other supplies as well as for mobility for the staff.
11. Arrange for active surveillance of poliomyelitis and neonatal tetanus. Identify sentinel centres, coordinate their work and arrange for field investigations when necessary.
12. Ensure regular monitoring and supervision of work. Send monthly feedback to the state EPI officer and PHCs.
13. Organize epidemiological evaluation of the services in consultation with the state EPI officer.
14. Conduct vaccination coverage evaluation surveys annually.



## 2.0 THE NATIONAL IMMUNIZATION SCHEDULE

While the vaccines are effective in protecting the children from serious diseases, they must however be given at the right age and the full course must be completed. They must also be handled carefully because they get damaged if they are not kept at +2 to +8 degree C. from the manufacturer to the point of use.

The age at which the vaccines are best given and the number of doses of each vaccine is called the Immunization Schedule. The immunization schedule is framed keeping in view the epidemiological pattern of the diseases, the types of vaccines available and the administrative and economic feasibility of providing the services. In our country we give :

2 doses of TT to pregnant women; and

3 doses each of DPT and OPV and 1 dose each of BCG and measles vaccines to infants.

School children are given DT, typhoid and TT vaccines.

### 2.1 IMMUNIZATION OF PREGNANT WOMEN

The pregnant woman develops adequate antibody titres to protect herself and her child after birth from tetanus (NNT) only 2 to 3 weeks after the second dose. It is, therefore, important that the 2nd dose be given at least one month before the expected date of delivery. It is recommended that the first dose be given on first contact during pregnancy, the second dose being given not earlier than one month after the first.

If the woman has received TT previously, one dose during the current pregnancy will be sufficient. This is called the booster dose.

If a woman reports late during pregnancy and there is no time to complete 2 doses, give one dose. In the UIP districts this situation is not expected to occur often as one of your responsibilities will be to identify and register all pregnant women in time.



## 2.2 IMMUNIZATION OF INFANTS

The children are given 3 doses each of DPT and Oral Polio Vaccine (OPV). Both these vaccines are given at the same time. These vaccines will protect the child from diphtheria, whooping cough, tetanus and poliomyelitis.

In India the children get the diseases at an early age. For example, in unimmunized communities 25 to 33% of all cases of polio are in children under one and more than two-thirds in children under two years of age. Since the children are at a high risk if they are not immunized, we must try to complete the 3 doses as early as possible and definitely before the child's first birthday. You can start the first dose as soon as the child is 6 weeks of age. The interval between the doses must not be less than one month.

One dose of BCG vaccine must also be given to the child to protect him from tuberculosis. The vaccine can be given at birth for institutional deliveries or when you are giving DPT and OPV vaccines.

Measles vaccine is not given before 9 months of age because the antibodies received from the mother will still protect the child and will not let the vaccine work. Give 1 dose as soon as the child completes 9 months of age (270 days). The vaccine can be given up to 15 months of age.

When the child is 1-1/2 to 2 years of age we give a booster dose of DPT and OPV.

The urgency for completing the full course of the vaccines in time must be explained to the mother so that she will know when to bring the child again for the next dose. If, however, the child could not come in time, the next dose should be given as soon as this is possible without starting all over again.

Sometimes the children are not given vaccines because they may have some mild illness at the time of the visit. Malnutrition, low-grade fever, mild respiratory infections, diarrhoea and other minor illnesses are not a contra-indication to vaccination. The vaccines should not be denied unless absolutely necessary. The vaccination of only critically ill children with high fever (38 C, 101 F or more) and children requiring hospitalization may be deferred.



Due to increased publicity and other mobilization efforts it is, however, likely that older children may also be brought for vaccination. These children may be given the vaccines "ON DEMAND" only. Such children should not be included for evaluating your vaccination coverage.

### 2.3 REACTIONS AFTER VACCINATION

- Reactions after vaccination are in general mild and of a short duration. These may be:

- \* Mild fever

- \* Local pain and swelling at the site of injection

- \* Mild rash one week after measles vaccination

- \* A lump or papule appears in the third or fourth week after BCG vaccination. It is generally not painful but is tender to touch. The papule increases in size to 6 to 10 mm in diameter by the sixth week. The nodule softens with the formation of pus. No treatment is necessary. At the end of 10 to 12 weeks only a small scar is visible.

In rare cases convulsions or collapse after DPT vaccination have been observed. In such cases further doses of DPT should be stopped. Instead, one dose of DT may be given (second dose). If 2 doses of DPT have already been administered, further doses are not required.

### 2.4 COMPLICATIONS

- Abscess formation is usually due to the use of unsterilized or inadequately sterilized syringes and needles.

- The injections are painful if blunt needles are used.

- Contaminated vaccines can lead to severe reactions. Use only sterile syringes and needles to mix vaccines and to draw them from the vials or ampoules (measles and BCG vaccines). Use a single sterile syringe and needle for each injection.

- The parents should be informed of the expected side-effects so that they do not worry. If there is any anxiety they should be encouraged to return to the health centre for consultation.



# NATIONAL IMMUNIZATION SCHEDULE

<u>To whom</u>	<u>When</u>	<u>Vaccine</u>	<u>No.</u>	<u>Route</u>
WOMEN	Pregnancy	TT	2*	Intra-muscular
INFANTS	6wks-12 months	] DPT	3	Intra-muscular
		] Polio	3	Oral
	Birth to 12 months	BCG	1	Intra dermal
	9 to 15 months	Measles	1	Sub-cutaneous
	18 to 24 months	] DPT	1**	Intra-muscular
		] OPV	1**	Oral
CHILDREN	5 years	DT	2*	Intra-muscular
	5 years	Typhoid	2	Subcutaneous
	10 years	TT	2*	Intra-muscular
	16 years	TT	2*	Intra-muscular

\* give one doses if vaccinated previously.  
 \*\* booster dose

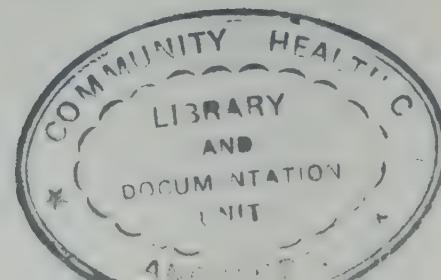
## NOTE:

- Interval between doses should not be less than one month.
- the dose of all vaccines is 0.5 ml. except BCG which is 0.1 ml. Polio vaccine is given by mouth in 2 drops. Check the label of the vial before use.

Older children may be given vaccines "ON DEMAND".

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### 3.0 DETERMINE NEEDS AND REQUIREMENT

#### 3.1 ESTIMATION OF ELIGIBLES

Your aim is to provide universal immunization coverage in your area. In order to do this you must have an estimate of the total annual number of pregnant women and infants. The numbers can be calculated by using the formula given below :

Population x Birth rate = no. of pregnant women

Population x BR x (1-IMR) = no. of infants at 1 year  
of age.

for example,

If the population served by a health centre is 95 000, the birth rate - 29/1000 and IMR - 95/1000 live births, the expected number of pregnant women and infants will be :

$$95\ 000 \times 0.029 = 2755$$

$$95\ 000 \times 0.029 \times (1-0.095) = 2494$$

The estimates of the pregnant women and infants should be worked out at each level locally.

The health workers should have a list of the pregnant women and infants in the areas covered by them. The list should be kept up to date. The information can easily be obtained during their visits to the villages and also through the village level workers such as dais, VHGs, anganwadi workers (AWWs) and others. The name of the child should be registered soon after birth, the vaccinations being given when the child reaches the right age.

At any given time, 100% of the total estimated annual number of infants and 60% of the pregnant women should be registered. If the numbers do not fall within 10% of your estimates, it is your responsibility to get the lists updated immediately. You may already have the required information in the Eligibles Couples Register (ECR).



### 3.2 ESTIMATION OF NUMBER OF CONTACTS

The number of vaccination sessions to be scheduled depends upon the number of children to be vaccinated in the area served by the health centre or vaccination site. If there are ten or more children to be vaccinated each day, schedule daily sessions. This will ensure that all children can be vaccinated at the earliest acceptable age, and will therefore give them the best protection against disease. If there are fewer than ten children to be vaccinated each day, the vaccines and the time of the health staff may be wasted by holding daily sessions, so it is better to plan fewer vaccination sessions.

To determine the average number of children to receive vaccinations per month (monthly target population), divide the number of children to receive vaccinations for the year by 12 and multiply by the number of doses of the vaccine which need to be given.

Each visit to the health centre or vaccination site for vaccination is called a "contact". Five contacts are required for one child to receive the complete series of vaccinations, so the total number of contacts will be five times greater than the number of children in the target population. Two contacts with each pregnant woman are expected.

### 3.3 ESTIMATION OF VACCINE NEEDS

Estimation of vaccine requirements and ordering for the right quantities of vaccines is critical for the success of your programme. The requirements depend on the population to be covered and the number of sessions to be held (periodicity of supply). This has been discussed in detail in the module on "Manage the Cold Chain System".

The vaccine requirements will depend on the number of pregnant women and children and on the number of sessions held.

The calculations for vaccine requirements are simple :

Total number of infants/pregnant women to be covered  
x no. of doses of the vaccine  
x 1.33 (x 2 for measles and BCG vaccines)  
: no. of sessions proposed to be held.

The vaccines are supplied in 10 or 20 dose vials or ampoules. The required number of doses are divided by 10 or 20 and rounded off to the next nearest number of vials or ampoules.

You must always check your previous balance stocks before placing orders for fresh supplies.

You must monitor the performance reports from the centres to which you supply vaccines to ensure that the expected number of pregnant women and infants are being immunized and the vaccines are not wasted. If the attendance is low, vaccine supplies must be suitably reduced till you can find out the reasons and take corrective measures to step up coverage.

Health centres should not keep more than one month's requirements and no vaccine should be stored at a subcentre.

### 3.4 ESTIMATION OF COLD CHAIN REQUIREMENTS

All vaccines must be kept at + 2 to + 8 C otherwise they lose their effectiveness to protect against diseases. The cold chain requirements will depend on the quantities of vaccines to be stored and the period for which they will be stored.

It is estimated that cold storage facilities for roughly 30 000 to 40 000 vials of all vaccines will be necessary at the district level(>3 month's requirements of an average district of 2.5 million population).

Storage capacity of around 900 to 1200 litres is required to store the above quantities of vaccines.



A PHC would roughly be required to keep 400 to 500 vials a month. Such quantities can be easily stored in an ordinary refrigerator.

Cold boxes, vaccine carriers and day carriers would be needed to carry vaccines to the lower formations and to the field. The total numbers will depend on the number of the centres, the staff in position and the strategies adopted for coverage.

### 3.5 ESTIMATION OF REQUIREMENTS OF SYRINGES AND NEEDLES

The total number of syringes and needles that you would require will depend on the number of pregnant women and infants you plan to immunize. It is expected that an ordinary glass syringe would be used at least 50 times and a needle 10 times before replacements are made. Reusable plastic syringes are also being supplied to the UIP districts. Such syringes can be steam sterilized up to 200 times.

The calculations of syringes and needles is quite simple:

Total number of pregnant women and infants to be covered	
x no. of doses of each vaccine (total number of injections)	
$\div$ 50 (glass syringes)	
$\div$ 200 (plastic syringes)	
$\div$ 10 (number of needles)	

A sterile syringe and needle should be used for each injection. The total number of syringes and needles at each session should not be less than the expected number of children and pregnant women during the session. The syringes and needles should be sterilized before the session.

You must ensure that adequate quantities of the syringes and needles have been distributed to the field workers and replacements are made to them periodically.

### 3.6 ESTIMATION OF REQUIREMENTS OF STERILIZATION EQUIPMENT

Arrangements must be made for the sterilization of syringes and needles for the immunization sessions.

Each PHC has been provided with an autoclave. The syringes and needles required for the sessions held at the PHC can be autoclaved the previous evening.

3 or 4 subcentres may organise vaccination sessions on the same day. These subcentres must be supplied vaccines from the PHC on the day of the sessions. The feasibility of autoclaving the required number of syringes and needles at the PHC and supplying them to the subcentres along with the vaccines must be seriously considered. This will ensure proper sterilization of the syringes and needles, save the time of the ANMs at the subcentres and also avoid the logistics of supplying kerosene and sterilization equipment to the subcentres.

Where the above arrangements are not operationally feasible stoves and pressure sterilizers must be provided to the subcentres. It will also be your responsibility to ensure that adequate stocks of kerosene are available. This should be replenished regularly.

Boiling of syringes and needles at outreach sites should be done only as an emergency and not on a routine basis. Sufficient number of sterilized syringes and needles should be taken by the health staff to the outreach sessions. The numbers taken should be at least 10% more than the expected number of children and pregnant women to be vaccinated on that day.

### 3.7 ESTIMATION OF REQUIREMENTS OF IMMUNIZATION CARDS

Vaccination cards must be given to all the pregnant women and infants. The card used for the pregnant women can be later used for the infant after the birth of the child. The cards should be in the regional language. During the first year of the programme you will, however, need more cards for the infants.

The number of cards you would need is as follows:

First year - total number of pregnant women and infants  
+ 10%

Later - total number of pregnant women + 10%.



#### 4.0 MANPOWER NEEDS

Make a list of the activities and allocate job responsibilities to the staff. Ensure that the following tasks are covered.

- a. vaccination coverage of pregnant women and infants;
- b. stores, including vaccines. The person concerned should indent for the required quantities of vaccines and other supplies in time. He should be responsible for the distribution of the required quantities to the lower formations and also for monitoring that the supplies are used properly.
- c. monitoring and supervision of services.
- d. preparation and display of health education material, advance plan for health talks in the community prior to outreach operation and campaigns.
- e. recording and keeping reports in order, compilation and analysis of the reports, forwarding the reports to the higher formations and providing feedback.
- f. surveillance of diseases.

Although, you may delegate some of the duties to others, the final responsibility for ensuring that the immunization sessions are organized efficiently and effectively is yours.

## **5.0 DETERMINE TRAINING NEEDS**

You are expected to immunize ALL pregnant women and infants in your area. This means that you must contact all the eligibles. Since some of the vaccines require repeated doses, each child must be contacted at least 5 times.

It is clear that unless the quality of the services is high it will not be possible to achieve universal immunization coverage. The planning and implementation of the programme must be meticulous. There is no scope for any default in the services. Even temporary dislocation can prove disastrous. Critical to the success of the programme will be the high quality and easy accessibility of the services.

It is expected that the medical officers at the PHC level responsible for the immunization programme will attend a 4 day course at the district level. The course will cover the modules on surveillance, cold chain and organization of immunization sessions. In addition, the manual for the health workers should also be covered.

All the MPWs and their supervisors are expected to undergo a 2 day task oriented course and cover the manual for the health workers. The course should include practical demonstration of all the items covered in the manual. The manuals are available in the regional languages.

## **6.0 DETERMINE STRATEGIES OF OPERATIONS**

The objective of the Universal Immunization Programme is to immunize each child with 3 doses of DPT and OPV and one dose of BCG and measles vaccines before the age of 12 months and to immunize all pregnant women with 2 doses of TT vaccine.

The programme is an integral part of primary health care and the services are provided through the existing health infrastructure. There is no separate cadre of staff. The programme is also a long term one. The services must be continued even in the absence of the diseases in the area. The planning process must take this into consideration so that high levels of coverage are sustained over the years.



You will provide immunization services through the fixed centres and where these are still inadequate by taking vaccines to the villages (outreach operations). In more difficult areas it may also become necessary to organise special teams to cover children and pregnant women.

Depending upon convenience and facilities available it may be necessary to adopt different strategies. Whatever strategies you adopt you must aim to cover all pregnant women and children under one year in your area. You must also keep in mind the need for sustaining the services over the years.

### 6.1 FIXED CENTRES

All the places which provide health services and have adequate cold storage arrangements, i.e. a reasonably reliable electricity supply and a working refrigerator must be identified. If vaccination services are not already available the possibility of doing must be considered.

All vaccines should be available at each centre so that the beneficiaries do not have to visit different places for different vaccines.

Vaccination sessions may be organized daily, bi-weekly, fortnightly or monthly depending upon the attendance to the clinics. A minimum of 10 children per session is usually considered to be economically viable.

The day and time of vaccination session should be fixed and should be prominently displayed.

All efforts should be made to hold the sessions regularly as scheduled.

If the hospital is a large one messages about the immunization programme should also be displayed in other departments which are likely to be visited by the women.

Case histories of every sick child should include the immunization status of the child. If the child is in the right age group and has not been vaccinated, the opportunity should be taken to do so. If it is not possible to immunize the child on the day, his mother/guardian should be advised about the immunization services.

Other specialists, specially obstetricians and gynecologists can help in educating and motivating the expectant mothers regarding the need for immunization coverage during pregnancy and early childhood.

Each fixed centre should have an earmarked area for coverage. Depending upon the population of the area, the expected number of pregnant women and infants should be estimated. Performance should be monitored monthly for coverage. If the attendance is less than expected additional steps may be necessary to improve performance. You will be concerned with problems that prevent children from receiving immunizations. Poor performance may be due to lack of information, lack of motivation or due to various obstacles. You will need to find out the reasons in your area and take corrective measures accordingly.

It is operationally easier and administratively cheaper to organise vaccination sessions at fixed centres. The services can be provided on a regular basis and continued conveniently over the years. It should therefore be your priority to identify and establish as many fixed centres as possible.

## 6.2 OUTREACH OPERATIONS

One of the reasons for poor coverage may be due to the fact that the villages are not within easy reach from the fixed centre especially in places with poor communication and transport facilities. In this case arrangements would need to be made for carrying vaccines and other supplies to the villages and organising sessions at site.

Contact the community leaders and explain the need for the early immunization of pregnant women and children. Fix a mutually convenient day for holding the vaccination session.



The involvement of village health guide/trained birth attendant, anganwadi workers and other field level workers is necessary for the success of the programme.

Select a site for the vaccination session. If an appropriate building (such as a school or a community centre) is not available a cool shady place may be chosen. The site should be freely accessible to all the members of the community.

Ask the people to find a contact person for you. The contact person knows when you will come; she (he) can tell the mothers, and find other people to help you.

Ensure that the health workers of the area have the list of the pregnant women and infants. If this is not ready make arrangements for getting the list up dated. The contact person and the grass root level workers can collect this information effectively and easily.

Explain to your contact person to collect the eligibles in time at the vaccination site.

Go through the checklist of articles which are to be carried for the out-reach sessions and make sure that the health workers have all these items. You would also need to take steps to deliver vaccines (and autoclaved syringes and needles) on the day of the sessions.

Arrange for repeat visits. The interval between the visits should be 4 to 8 weeks. It should not be less than one month.

All efforts must be made to hold the sessions on the fixed days. If this is not possible the villagers must be informed in time and the date for the next session fixed.

### 6.3 CAMPAIGNS/INTENSIVE DRIVES

Campaigns are usually organized during the winter months in areas which cannot be covered either through the fixed centres or by outreach operations. Teams of health workers move from village to village carrying adequate quantities of the vaccines and other supplies. It may be necessary to mobilize manpower for a short period from other areas such as the district headquarters.

As for the outreach operations prior ground work must be done to make the drive a success. Since a large number of villages are expected to be covered within a short period of time and the distances to be covered from the health centres is also greater, village-wise time schedule and the mode of transportation must be clearly chalked out in advance.

Active community participation would greatly facilitate the work. The village leaders, elders, teachers and others should be encouraged to keep the list of eligible children ready and collect them at the vaccination site on the prefixed day and time. Arrangement for repeat visits must be made at an interval of 4 to 8 weeks. Sustainability of services should be carefully considered before organizing the campaigns.



### Exercise A

Instructions: Do steps 1 through 5. Check your answers with a course manager when you completed step 5.

1. Determine the annual target population (number of children to receive vaccinations for the year) for each village on the map on page 34. For this exercise, assume that the number of children to receive vaccinations is 3% (0.03) of the total population. Use columns 1 and 2 of the worksheet provided on page 25 to do your work.
2. Determine the number of vaccination sessions to schedule for each of the villages on the map. Use columns 3 through 6 of the same worksheet you used for step 1.

To do this:

- a) Divide the annual target population of each village (from step 1) by 12 in order to find the monthly target population (number of children to receive vaccinations per month) (column 3).
- b) Multiply the monthly target population of each village (from step 2.a) by the number of contacts per child, which you can assume to be 5 (column 4).
- c) For each village, divide the total number of contacts per month (from step 2.b) by 10 (the minimum number of children recommended for a vaccination session). This will give you the maximum number of sessions per month (column 5).

Following is an example of how steps 1 and 2 should be performed:

- The total population of a village is 3,000.
- Annual target population =  $3,000 \times 0.03 = 90$ .
- Monthly target population =  $90 \div 12 = 7.5$
- Number of contacts per month =  $7.5 \times 5 = 30$
- Maximum number of sessions per month =  $30 \div 10 = 3$
- No. of vaccination sessions to schedule = 1 every  
2 weeks

3. Use your answers from steps 1 and 2 above to schedule vaccination sessions for each of the villages on the map. Be sure you schedule the appropriate number of sessions for each village. Assume that you have enough staff members to conduct as many vaccination sessions as you need to. Also assume that you have talked to mothers in each village in order to determine which days and times would be most convenient for them to attend vaccination sessions, and that you have learnt the following:

Village A - Mothers prefer different days, but most can come during the morning.

Village B - The market is held on Wednesday and Saturday mornings. Mothers are too busy to come during the morning, but they can come in the afternoon.

Villages C, D and G - Mothers have time to come to the vaccination sessions during the Saturday morning markets.

Villages E and F - Markets are held on Wednesday and Saturdays, but the mothers are too busy all day long to attend vaccination sessions on those days.

As you determine the specific days and times for the vaccination sessions for each village, fill in the spaces on the blank vaccination sessions schedule forms provided on page 26. For this exercise do not write in the column labelled "Person Responsible", even though you will fill in this column when making vaccination sessions schedules for your health centre.

4. List at least ten possible obstacles which could prevent vaccination sessions from being conducted as scheduled. Use the worksheet provided on page 27 to do your work.
5. Describe the precautions you can take in order to prevent the problems which might arise from three of these obstacles. Use the worksheet provided on page 27.





10 Kilometers



all-weather roads



bus routes

Total Population

Village A: 26,000

Village B: 5,000

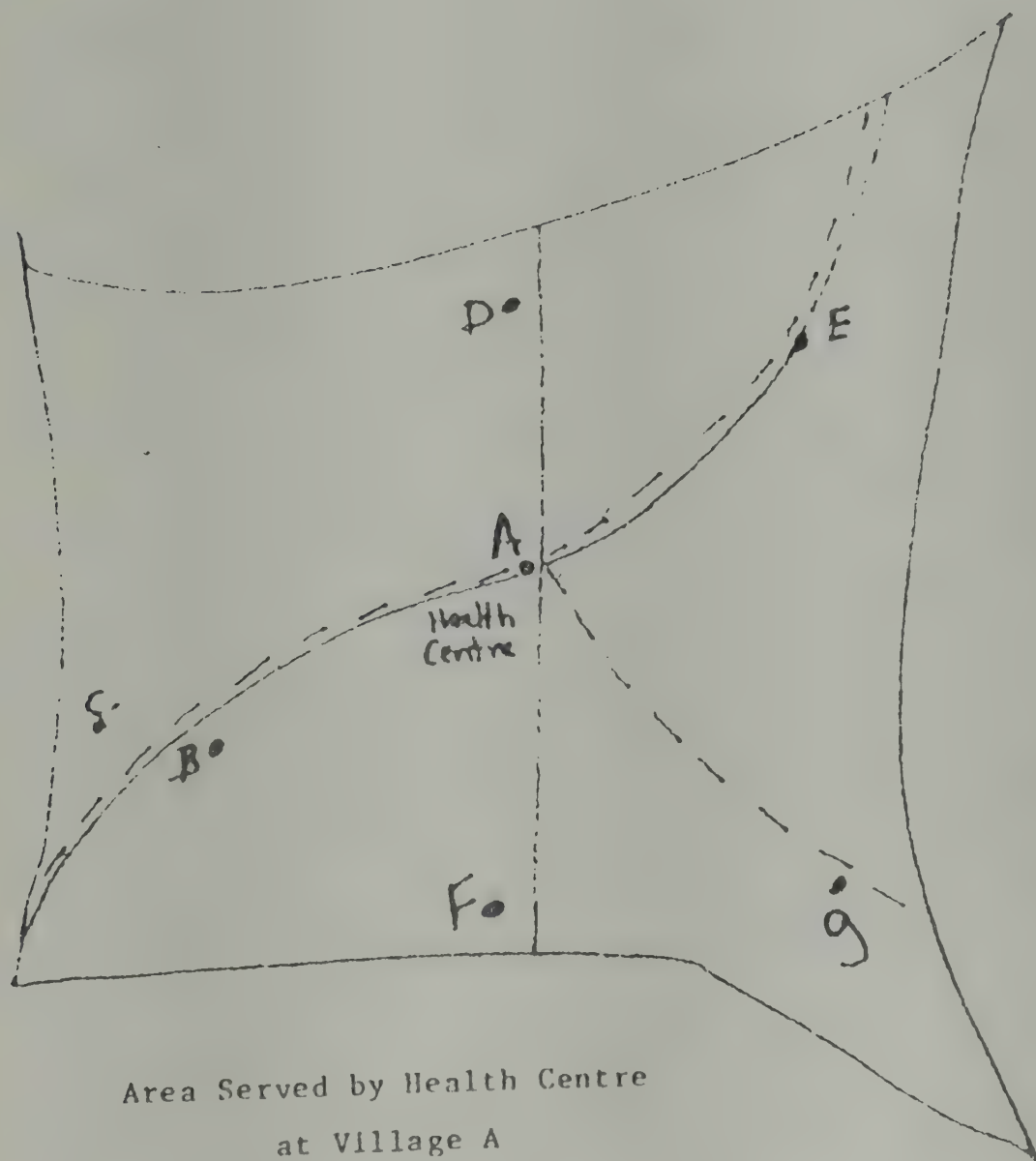
Village C: 1,000

Village D: 2,000

Village E: 9,000

Village F: 7,500

Village G: 500



Area Served by Health Centre  
at Village A

Worksheet for Exercise A, steps 1 and 2

	1	2	3	4	5	6
Village	Population	$\times 0.03$	$\div 12$	$\times 4$	$\div 10$	Number of Sessions to Schedule
Example: X	3,000	90	7.5	30	3	1 every 2 weeks
A						
B						
C						
D						
E						
F						
G						



Worksheet for Exercise A, step 3

VACCINATION SESSIONS SCHEDULE			
_____ Health Centre			
Day	Morning	Afternoon	Evening or Night
Sunday			
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			

[illegible]

Worksheet for Exercise A, steps 4 and 5

See a course manager when you have completed this exercise.



## 7.0 SCHEDULE VACCINATION SESSIONS.

Fix the date and time of vaccination sessions. This should be prominently displayed at the fixed centres. In case of outreach operations, advance information must be given to the concerned people.

Sterilize the syringes and needles sometime before the session is to start since they will take a while to cool. Rinse and clean before boiling. Boil for twenty minutes. Start counting the time after the water has started to boil. Use the syringes and needles only after they have cooled. Use a sterilised syringe and needle for each injection. The syringes and needles should be picked up by sterilized forceps. Do not touch with unwashed hands or keep on an unsterile surface.

Screen children to see that they are in the age groups recommended for vaccinations and that they are not seriously ill.

Infants are given three doses each of DPT and polio vaccines and 1 dose of BCG. DPT and polio vaccines are given together. BCG vaccine can be given with any one of the three doses, but the sites of the injections should be different. DPT vaccine is given intra-muscularly, BCG - intradermally. Polio vaccine is given by mouth. Measles vaccine is given by sub-cutaneous injection at 9 months of age.

The minimum number of visits a child would have to make to complete the course of vaccinations would be five. One more visit is necessary 12 to 18 months later for the booster doses of DPT and polio vaccines.

School aged children are given DT, typhoid and TT vaccines. The dose of each vaccine is 0.5 ml. DT and TT vaccines are injected intramuscularly and typhoid vaccine subcutaneously.

Pregnant women require TT vaccine by intramuscular injection.

Older children may be given vaccines "ON DEMAND". Children above 2 years of age may be given only 2 doses of DT instead of DPT and OPV.

If the vaccines have been taken out to an outreach site/subcentre must be returned to the health centre on the same day. Mark the unopened vials in some way (put a rubber band or mark a cross or red dot on each) and return them to the refrigerator. Be sure to use these marked vials during the next vaccination session. All opened vials should be discarded at the end of the session.

The typhoid vaccine supplied under the immunisation programme for school children is diluted. The dose of this vaccine is 0.5 ml. This vaccine (for children) should not be given to adults.

The diluent used for reconstituting BCG and measles vaccines should be cooled before use. Mix the vaccines with a fresh sterile syringe and needle.

Keep a record of the vaccinations done during the day in a register at the centre. These should include the name and address of each child, age, the type of vaccine and the number of dose. Note the batch number and the expiry dates of the vaccine vials used during the day.

Entries should also be made in the immunisation card which is handed over to the guardian of the child.

Inform the parents about the date of the next visit. Impress the need for completing the full course. Inform them that the vaccines will protect their children only if all the doses have been given. Tell them about the expected reactions. Reassure them that you are there if they need your help.

Wash syringes and needles after use thoroughly with water.

Clean up the site in case of outreach operations. Inform the community of the date of the next visit. Proper scheduling is essential if immunization activities are to be successful. Vaccination sessions must be on days and at times and places that are convenient for mothers so they will be able to bring their children to be immunised.



The sessions must be held frequently enough so that the number of children brought to each session is not so large that mothers have to wait for long periods or that the staff will not have time to vaccinate all of the children.

Finally, the sessions must be held at appropriate intervals so that the children will receive the intended benefit from each set of vaccinations.

A VACCINATION SESSIONS SCHEDULE shows the days and times at which vaccination sessions are to be held. It is important that mothers be informed of this schedule so they will know when to bring their children for vaccination.

## 8.0 COMMUNITY SUPPORT AND DEMAND GENERATION

### 8.1 MOTIVATING THE COMMUNITY

#### The need for cooperation

\* For your immunization programme to succeed, you need people to cooperate. It also makes your own work more interesting and pleasant.

\* Busy mothers must take time and make the effort to come to your immunization session. They must remember when to come again.

\* You need people to cooperate if you are to arrange an outreach session. You need help from the community to find an immunisation site, and to borrow furniture. And you may need help during the session itself - for example, to register children. You need help to encourage and remind mothers to attend.

\* People will cooperate to make the programme succeed if THEY WANT the immunizations. They will not cooperate very well if they only accept immunizations because YOU want them to. They need to feel that their children's health is THEIR responsibility. You are there to help them to have something that they want to value.

\* So, first you have to make the community want the immunization programme. That is, you must motivate or move the people.



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## 8.2 HOW CAN YOU MAKE PEOPLE IN A COMMUNITY WANT YOUR IMMUNIZATION PROGRAMME?

### FIRST - FIND THE PEOPLE IN THE COMMUNITY WHO CAN HELP

political leaders (e.g. village pradhans, panchayat members);  
community leaders;  
traditional birth attendants (trained dais)  
school teachers  
government staff (other allied departments)  
extension workers (e.g. agriculture)  
women's groups (e.g. mahila mandals)  
village health guides  
traditional healers  
religious leaders  
youth organizations  
NSS volunteers

Each community is different. You must find the right people in your community.

Explain to them about the dangers of the target diseases; and about vaccines and prevention.

Explain about your immunization programme, and what you are trying to do.

Seek their help on how to motivate the people in the community.

Ask for their help if there is any opposition or other problems in providing the services.

Ask for their help to explain the programme to the community.

Consult them before fixing the date and time. Remember if the date or time is not convenient few will attend. However, you must be practical also. Make sure you can arrange for the session on that day.

Ask them to encourage people to come to the session.

## SECOND - MAKE SURE THAT COMMUNITY'S EXPERIENCE OF IMMUNIZATION IS A GOOD ONE

People's experience of your sessions will have a big effect on their motivation.

Be reliable, punctual, polite and friendly.

Look after your vaccines carefully so that as a result of your work there will be no disease in the vaccinated children. This will motivate the others to bring their children to you.

Give the community some feedback. Tell people the results of your work; how many children you have immunized.

### 8.3 COMMUNITY PARTICIPATION

Since active community involvement is essential to maintain universal levels of coverage you should be concerned if the participation is less than your expectations. The reasons for the poor participation by the community can broadly be classified into three categories:

#### 8.3.1 Lack of Information

a) about the severity of the diseases or the complications they can cause.

b) about the diseases that can be prevented.

c) about the services that are available.

d) about the time and place of vaccination sessions.

e) about the age at which vaccinations are required and the need for completing the full course.



### 8.3.2 LACK OF MOTIVATION

- a) no faith in vaccinations.
- b) rumour about ineffectiveness or harm.
- c) poor service and/or discourteous behaviour of staff.
- d) fear of side reactions.

### 8.3.3 OBSTACLES

- a. vaccination centre too far.
- b) time not convenient.
- c) inconvenient or expensive to travel to the centre.

Since the reasons may differ from place to place these must be looked into if there is a poor response from the public. It has generally been found that this is either due to lack of information or the time and place not being convenient. Courteous and efficient services will encourage community participation. The programme should be monitored to see that there are no reactions due to improper sterilisation of syringes and needles or wrong technique of administration of vaccines. The cold chain should be monitored strictly. Any case in a vaccinated child should be treated as a public health emergency and necessary investigations conducted immediately.

The health education sessions should be conducted in a language and content easily understood by the local people. The person conducting the health talks should be experienced, knowledgeable and motivated. For passing on simple messages, however, all members of the health team, including dais, anganwadi workers (AWWs), and village health guides (VHGs) should be used.

Posters on the diseases and immunization schedule should be placed at strategic points. Teaching and publicity aids provided, should be used.

Discuss the problems encountered with the health staff. Encourage them to ask question and seek your help.

You can assess your success in motivating the community by coverage of pregnant women and infants with the full course of the vaccines.

High drop-out rates are indications of problems in your area. Look into it urgently. Take necessary measures in consultation with the staff and the community leaders.

You have been very successful in getting good community response to your programme if all the children get 3 doses each of DPT and Polio vaccines, and one dose each of BCG and measles vaccines by first birth day and all pregnant women get two doses or booster of tetanus toxoid.



## Exercise B

### Instructions:

1. Read the following Situation Description and Population Description:

#### Situation Description

Recently a random survey was conducted to determine the reasons why mothers decided to have their children vaccinated or not to have their children vaccinated with DPT. 50 mothers of children who had been fully vaccinated, 50 mothers of children who had been partially vaccinated, and 50 mothers of children who had not been vaccinated were interviewed. Each mother was asked, "Why did you have your child vaccinated?" "Why did you not return for the second or third dose of DPT?" OR "Why did you not have your child vaccinated?"

#### Population Description

The population surveyed has the following characteristics:

- # 50% speak only the local dialect.
- # 20% can read and write either the official or local language.
- # 50% of school-aged children go to primary school.
- # There are 50 radios per 1,000 people. Radios are shared, and many people listen to each radio.
- # There are 3 telephones per 1,000 people.
- # 70% of heads of families are farmers. 20% are industrial workers, and 10% work in other occupations.
- # Traditional leaders are very influential in the rural areas.

2. The worksheet for Exercise B is given on page 38.
3. Think of possible reasons why some of the mothers in the population described above did not bring their children for vaccinations or did not return for later doses. List these reasons in the section for Causes of Non-Participation on the Worksheet.
4. Write a check (✓) in the box for the category to which you think each cause of non-participation belongs. The categories are:
  - Lack of information;
  - Lack of motivation;
  - Obstacle.
5. After you have finished this exercise, tell a course manager. When everyone has finished this exercise, there will be a short group discussion in which you may share your ideas.



## (Worksheet for Exercise 3)

[illegible]

### Exercise C

#### Instructions:

1. The Worksheet for Exercise C is given at page 40.
2. Look again at your Worksheet for Exercise B. Write each cause listed on that Worksheet in the appropriate section on the new Worksheet. For example, if you checked "Lack of Information" for a certain cause, write that cause in the box labelled "Lack of Information" on the Worksheet for Exercise B.
3. Now think of methods to remove each cause of non-participation. You may refer to the suggestions in Step 2.1 of this module, but try to think of other methods as well. Remember that each method you choose should be suitable for the population described on page 36.
4. Finally, on the Worksheet for Exercise C, list suitable methods of informing, encouraging and removing obstacles besides each cause of non-participation.
5. Tell a course manager when you have completed this exercise. After everyone has completed it, there will be a group discussion in which you may present your decisions.



(Worksheet for Exercise C)

Causes of Non-Participation (determined in 1.0)	Methods of Increasing Participation	2.0
Lack of Information	Inform parents by:	
Lack of Motivation	Encourage parents by:	
Obstacles	Remove obstacles by:	

## 9.0 ARRANGE MONITORING AND SUPERVISION

One of the primary responsibilities of the medical officer of the PHC is to supervise the work being done by the staff. The objectives of the programme will not be achieved if certain tasks that should be done are either not being done correctly or not being done at all. It is necessary to observe frequently the work of the staff in the field and to study carefully the reports submitted by them.

The purpose of supervision is to reinforce correct performance and to identify and correct inadequate performance.

Supervision means not only to pinpoint the problems in time so that corrective action could be taken but also to assist the staff and help them in case of difficulties. Opportunity should be given to the staff to clear their doubts if there are any. Written job descriptions, thorough briefing and a coordinated team work will no doubt go a long way in the efficient implementation of the services.

### 9.1 EVALUATION OF SERVICES

Evaluation is a process by which the success of the programme is assessed. It is to determine whether the objectives laid down have been achieved. Evaluation is important because it allows the UIP coordinators to determine if they are doing what needs to be done, if their programme is making progress according to plan, and helps to identify what needs to be changed to make the programme work better.



Although the quality of services must be evaluated and each major aspect such as cold system, surveillance, health education, etc. must be studied in detail, two criteria have been laid down for the overall evaluation of the services:

- a) Vaccination coverage of the eligible population
- b) Reduction in the incidence of poliomyelitis and neonatal tetanus.

a) Vaccination Coverage

- i) Monthly reports forwarded by the units are compiled. The information received is analysed to find out whether the coverage planned has been met. The drop out rates are also checked.
- ii) Vaccinations given from sources other than the government centres are not included. To confirm the reported coverage, evaluation surveys should be organized in the District annually. The standard 30 cluster sampling technique is followed and vaccination history of children between 12 and 23 months of age is taken.

The results of such surveys will be particularly useful if they are coupled with an investigation and recording of the cold chain system. The temperature records of the refrigerators in the area used for storing vaccines must be particularly checked.

## 9.2 IMPACT ON DISEASE REDUCTION

Vaccination of the children will in itself not lead to a reduction in the number of cases of the particular diseases if the vaccines were either not given at the right age, or were given in less number of doses than required or if the vaccines were made ineffective due to exposure to excessive heat or cold.

Places reporting high vaccination coverage should be evaluated to study the impact of the services provided. The routine reports of cases and deaths and the reports from the sentinel centres should be studied carefully to see if there is any change in trend of the diseases.

Active surveillance may be started for diseases which are clinically distinct and easily recognisable such as poliomyelitis and tetanus. The community should be encouraged to report cases of the diseases. The cases must be examined by a medical officer to confirm diagnosis and provide treatment where indicated.

Annual independent check for poliomyelitis and possibly tetanus should be made by visiting at random some of the villages or wards and enquiring of any children who had poliomyelitis or tetanus over the last 12 months from the local medical officers and village elders. Lameness surveys should be conducted with vaccination coverage evaluation surveys.

### 9.3 POTENCY TESTS

The ultimate test of the quality of the cold chain system will be its effectiveness in keeping vaccines potent till the point of use.

Testing facilities are available at the Central Research Institute, Kasauli (H.P.), National Institute of Communicable Diseases, Delhi and the Enterovirus Research Centre, Bombay for testing the potency of field samples of OPV.

OPV has been taken as "indicator" of the quality of the cold chain as this vaccine is more heat labile than other vaccines, and it is easier to test. The test takes only 7 days to complete and does not require scarce laboratory animals.

Opened vials can also be sent for testing and the vials should be lifted from all levels - from the village to district stores.

The samples should be sent packed in ice otherwise there will be a drop in the virus titre during transportation.

You must lift OPV vials during your field visits and send them to your State officer. The samples can be periodically lifted - say once or twice a month. The vaccine samples should be kept in a freezer/refrigerator before these can be sent to the State officer. You must monitor the storage very carefully to make sure that there is no fall in potency during storage at your store.

While sending samples for testing you must indicate clearly the place from where the sample(s) were lifted, date when it was lifted and batch number and expiry date of the vial.

A copy of the monthly report form on UIP and a check list for the supervision of the programme are given at pages 44 to 47.



# UNIVERSAL IMMUNIZATION PROGRAMME

## MONTHLY REPORT

DIST/MC CODE NO:

Month \_\_\_\_\_ 198...

--	--	--	--	--	--	--	--

STATE \_\_\_\_\_

DISTRICT \_\_\_\_\_ Medical College \_\_\_\_\_

No. of reporting units \_\_\_\_\_ Urban \_\_\_\_\_ Rural \_\_\_\_\_

No. of reports received \_\_\_\_\_ Urban \_\_\_\_\_ Rural \_\_\_\_\_

### A. SURVEILLANCE

Disease	Number Reported			
	For the month		Cumulative since April	
	Cases	Deaths	Cases	Deaths
Diphtheria				
Pertussis				
Tetanus neonatorum				
Tetanus (others)				
Poliomyelitis (acute)				
Tuberculosis (childhood)				
Measles				
Typhoid fever				

### B. VACCINATION PERFORMANCE

	Vaccine	Dose	No. of Beneficiaries		Cumulative since April	
PREGNANT WOMEN	TT	1				
		2				
		b				
			UNDER 1 YEAR	OVER 1 YEAR	UNDER 1 YEAR	OVER 1 YEAR
CHILDREN	D P T <i>6 wks - 8-12 months</i>	1				
		2				
		3				
		18-24 months	b			
	Polio <i>6 wks (8-12 months)</i>	1				
		2				
		3				
		18-24 months	b			
	B C G (8-12 months)	1				
	Measles (9-15 months)	1				

CHILDREN	Vaccine	Dose	No. of Beneficiaries	Cumulative since April
	DT (5 Years)	1		
		2		
		b		
	Typhoid (5 Years)	1		
		2		
	TT (10 Years)	1		
		2		
	TT (16 Years)	1		
		2		

C. VACCINE SUPPLY (no. of <sup>vials</sup>~~dozes~~)

Vaccine	Stock in hand (Beginning of month)	Received	Used	Balance (End of month)
D P T				
Polio				
B C G				
Measles				
TT				
DT				
Typhoid				

D. REFRIGERATORS (NO.)

District Hdq. Total No. \_\_\_\_\_ Total No. \_\_\_\_\_ Working \_\_\_\_\_  
available installed

PHCs Total No. \_\_\_\_\_ Total No. \_\_\_\_\_ Working \_\_\_\_\_  
available installed

DEEP FREEZERS (NO.)

District Hdq. Total No. \_\_\_\_\_ Total No. \_\_\_\_\_ Working \_\_\_\_\_  
available installed

ILRs (NO.)

District Hdq. Total No. \_\_\_\_\_ Total No. \_\_\_\_\_ Working \_\_\_\_\_  
available installed

PHCs Total No. \_\_\_\_\_ Total No. \_\_\_\_\_ Working \_\_\_\_\_  
available installed

E. UNTOWARD REACTIONS reported Abscesses \_\_\_\_\_ Others \_\_\_\_\_

DISTRICT HEALTH OFFICER/  
Prof of PSM/Pead.....Medical College

DATE:

To

1. Assistant Commissioner (Immunization) Department of Family Welfare  
Ministry of Health & Family Welfare Nirman Bhavan, New Delhi-110011
2. State EPI Officer



# SCHEME ON UNIVERSAL IMMUNIZATION

## CHECK-LIST FOR MONITORING

MONTH:.....

CODE

STATE .....

DISTRICT...../Medical College .....

INSTITUTION/UNIT VISITED .....

STATE	DISTRICT	MC			

Point	Method	Indicator of problem	Notes
1. Number vaccinated	Check register spot checks.	* Achievement less than the proportionate target.	
2. Age	-do-	* More than 10% of the children given DPT and polio vaccines above 12 months of age.	
3. Drop out rate	-do-	* Drop out for the first to the third dose more than 15%.	
4. Utilization	Check vaccine stocks.	* Vaccination utilization less than estimated by performance reports.	
5. Stocks	Check register Verify stocks.	* More than one month's requirements at PHC.	
		* More than three month's requirements at district and state stores.	
		* Nil stocks at district and state stores.	
		* Date expired vaccine.	
6. Storage	Check temp. record form Check refrigerator.	* Temperature record not maintained.	
		* Frequent rise in temperature above 8°C.	
		* Door frequently opened by unauthorised personnel.	
		* Thick layer of ice around freezing compartment.	
		* Vaccines stacked haphazardly.	
		* Vaccines kept in the door.	

Point	Method	Indicator of problem	Notes
7. Distribution	Check records Question staff Observation.	* More vaccines taken to the field than daily requirement.	
		* Less vaccines taken to the field than daily requirement.	
		* Ice packs not frozen completely.	
		* Ice not sufficient.	
8. Session	Observation Discussion	* Attendance less than expected.	
		* Session dates changed frequently and without notice.	
		* Unsterilized equipment used.	
		* Disorderly movement of people.	
		* More than one vial of same vaccine opened at one time.	
		* Vials not kept on ice/ cup with iced water while in use vaccines exposed to direct sunlight.	
		* Community not informed about immunization schedule expected reactions of date of next visit.	
		* Impolite behaviour of staff.	
9. Reactions	Question Examination of children.	* Abscesses.	
		* Severe reactions.	
10. Impact	Check records Question staff & community Examination of children.	* Reported cases in vaccinated children.	

Date.....

To

1. State EPI Officer
2. Assistant Commissioner (Immunization) Department of Family Welfare  
Ministry of Health & Family Welfare Nirman Bhavan, New Delhi-110 011

**NAME AND DESIGNATION**  
(in block letters)



## Notes

## Notes

## Notes



## Notes

## Notes

## Notes



## Notes

## Notes

## Notes



## Notes

## Notes

## Notes







